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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/643,405 | 08/19/2003 | Vasile B. Neculaes | UOM 0290 PUS 1 | 4003 |

22045 7590 09/20/2004

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EXAMINER

HOANG, TU BA

ART UNIT PAPER NUMBER

3742

DATE MAILED: 09/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/643,405

Applicant(s)

NECULAES ET AL.

Examiner

Tu Ba Hoang

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 August 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 8/2003; 2.6.7/2004.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

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Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the electrical circuit for generating a radial electric field, the axial magnetic field is azimuthally varying, the cathode and anode, the crossed-field amplifier, must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 12, the phrase "such as" renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gopanchuk et al (US 5,798,602). Gopanchuk et al discloses substantially all of the claimed features including a device or plasma processing magnetron (i.e., plasma accelerator, column 1, line 6) which comprises an electrical circuit (33,18) for generating a radial electrical field (column 6, lines 61-63) and a magnetic circuit (8) for generating an axial magnetic field 25 (column 7, line 12) substantially perpendicular to the radial

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electric field (i.e., crossed), a cathode 33 for emitting electrons, an anode 18 having a plurality of resonant cavities 19,32, wherein the axial magnetic field is azimuthally varying (column 7, lines 12-14), wherein the cathode and anode define an interaction space 22 therebetween so that interactions between electrons emitted from the cathode and the electric and magnetic fields produce a series of space charge spokes 23 that travel around the space in an azimuthal direction (as shown in the drawing), the magnetic circuit (8) includes at least one permanent perturbing magnetic field source or magnet (2), pole pieces or space magnets (4,6), and coils (5,7). Gopanchuk et al does not disclose that the axial magnetic field is azimuthally varying to substantially eliminate noise in the device and the device is a microwave magnetron such as lighting magnetron, industrial heating magnetron, crossed-field amplifier, or radar amplifier. However, Gopanchuk et al has disclosed that the electrons emitted by the electrical circuit under the influence of the radial electric field starts drifting in the azimuth direction (i.e., the axial magnetic force) as set forth at column 7, lines 9-15. It is clear that the electrons diffuse into the magnetic field the ions or the noise wave would obviously be drifted in such azimuth direction and thus, the Examiner's position is that depend upon a particular application, to use the device in applications such as lighting magnetron, industrial heating magnetron, crossed-field amplifier, or/and radar amplifier would be considered as intended uses and choices, and thus to use the device taught by Gopanchuk et al with the axial magnetic field azimuthally varying in order to substantially eliminate noise in a microwave ovens, microwave magnetrons and others, if so desired, would be within the purview of obviousness to one having ordinary skill in the art and furthermore, since such device included the same structural limitations would also provide substantially equivalent functions.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-21 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-22 of

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copending Application No. 10/417,655. Although the conflicting claims are not identical, they are not patentably distinct from each other because the recitation of "the magnetic circuit includes at least one permanent perturbing magnet having an azimuthally *varying magnetic field impressed thereupon* so that the axial magnetic field is azimuthally varying to substantially eliminate noise in the device" as recited in the instant application (claim 1) wherein "the at least one permanent perturbing magnet is magnetized with a *number of periods of magnetic field variation*" as recited in the instant application (claim 2) is simply equivalent to "the magnetic circuit includes at least one perturbing magnetic field source for causing azimuthally *varying perturbations* in the axial magnetic field" (as recited in the copending application, claims 1 and 9) because it is clearly "perturbations" obviously the same or equivalent to "number of periods of magnetic field variation".

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Farney et al (US 5,412,281), MacMaster et al (US 4,928,070), Ogura et al (US 5,635,798), Kinuno et al (US 4,855,645), and Wilbur et al (US 3,958,148).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tu Ba Hoang whose telephone number is (703) 308-3303. The examiner can normally be reached on Mon-Fri from 8:30AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Tu Ba Hoang
Primary Examiner
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September 16, 2004